



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/169,127	12/20/1993	HISATO SHINOHARA	0756945	2677
22204	7590	05/19/2004	EXAMINER	
NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			PADGETT, MARIANNE L.	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/169,127

Applicant(s)

Shenohara et al

Examiner

M.L. Padgett

Group Art Unit

1762

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 9/9/02, 11/01/02 & 1/9/03

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-4, 6-9, 11-14 & 16-139

is/are pending in the application.

Of the above claim(s) 11-14, 16-20, 63, 65, 68, 70, 73, 75, 78, 80, 83, 85, 88, 90, 97, 101, 113-130 & is/are withdrawn from consideration.

☐ Claim(s) _____

is/are allowed.

☒ Claim(s) 1-4, 6-9, 18-22, 61-62, 64, 66-67, 69, 71-72, 74, 76-77, 79, 81-82, 84, 86-87 is/are rejected.

☐ Claim(s) _____

is/are objected to.

☐ Claim(s) _____

are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received

in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s) (1/21/03), 34(2/22/09), 58(9/9/02), 62(11/01/02) & 63(1/9/03)

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s), 62, 63

☐ Interview Summary, PTO-413

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

2004/04/19

Art Unit: 1762

1. Applicant 4 new IDS of 7/21/03, 11/01/02 (paper #62), 1/9/03 (paper #63) and 9/9/02 (paper #58) are made of record, however, in the 9/9/02 IDS, the literature reference Misura et al was found among the paper scanned into the 'electronic file', hence this reference was not going to be considered, but has been [re]supplied to the examiner via Fax on 4/15/04.

In the 9/9/02 IDS statement, applicant also requested consideration of references cited in PTO 1449 of IDS from 2/19/99 and 12/7/99. The latter appears to be the IDS stamped and [stamp] dated in the electronic file as 12/9/99 (paper #42), was previously considered on 6/1/2000, as noted in paper #44 (mailed 6/5/00), and another IDS with mail date 12/7/99, stamp date 12/17/99 (paper #37) considered 2/23/02. However paper #46, mailed 7/10/00, indicated there was a supplemental IDS with stamp date 12/10/99, certificate of mailed dated 12/7/99, associated with paper #45, that was not considered, but no trace of either paper #45 nor this IDS has been found by the examiner in the scanned file. Applicant was contacted concerning these missing papers and the secretary FAXed the missing PTO-1449 on 4/15/04. Subsequently, the translation for JP61-31288 was not found in the scanned file, nor were translations or originals for DE 39 25085C1 or JP61-725549. Applicants' representative's secretary was going to attempt to find and FAX the missing references, but no copies were received, hence these references have not been reviewed.

The 2/19/99 IDS corresponds to paper #34, stamped date 2,22/99, has also now been considered.

2. Applicant's election with traverse of Species (C), subspecies ii, nitride in Paper No. (65 or 6/13/03) and (9/5/03) is acknowledged. The traversal is on the ground(s) that they are not proper species. This is not found persuasive because of reasons discussed in the mailing of 8/29/03, noting that the examiner partially agreed with applicants in that paper, recombining the previous species (d) with (a), but applicant's subsequent response does not appear to have considered any discussion therein nor the condensing of species, as the arguments of 9/5/03 are identical to those of 6/13/03.

Art Unit: 1762

Furthermore, while applicants have stated traversal of all species, no arguments are given concerning the subspecies Si oxide or Si nitride or transparent conductive oxide, as to why these different compounds are not properly considered species. Note that should one species be found allowed, then the next listed species is automatically examined, etc.

The requirement is still deemed proper and is therefore made FINAL.

3. Applicant's election of subspecies in Paper No. 9/5/03 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
4. This application contains claims 11-14, 16, 23-60, 63, 65, 68, 70, 73, 75, 78, 80, 83, 85, 88, 90, 97-101, 113-130 & 136-139 drawn to an invention nonelected with traverse in Paper No. (6/13/03 & 9/5/03). A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
5. Applicant's amendment H (9/9/02) and I(11/01/02), which clarify laser beam/cross-section substrate configuration for appealed claims 1-4, 6-9, 11-14 and 16, and use like phraseology for new claims 17-139, remove the 112 rejections and the 103 art rejections based on Yamazaki et al (4,786,358), as they conform with support in certified translation of priority documents, thus removing Yamazaki et al as a prior art reference.
6. Claims 61-96 & 101-109 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

New claims 61, 66, 71, 76, 81 & 86 add new limitations concerning "an active matrix display device having an active matrix circuit and a driving circuit" and limitations concerning forming "a plurality of thin film transistors using...channel regions..." and the claimed circuits include the claimed

Art Unit: 1762

transistors. The examiner found no discussion as to a "driving circuit" or what it might be, hence it appears to be New Matter, of unknown meaning and scope. Page 12 of the specification was found to have a specific example of treating crystallized regions to make source and drain regions, thus a thin film transistor, where this is said to result in "an active matrix circuit for driving a liquid crystal device". Nothing about channel regions was found disclosed herein; hence they also appear to be new matter and how they relate unclear to the examiner. Nor does this disclosure of how to produce a single transistor appear to support the claim of a plurality and how they will be employed to make the claimed device and circuits that are only partially supported, and unclear to the examiner as to what exactly they actually are. In light of the specification, "active" will be considered to mean semiconductive or doped, so will not be considered a relative term.

Claims 61-96 & 101-109 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As noted above no support was found for driving circuit, channel regions and their related associations, consequently the lack enablement to define what they are, how they are made and employed, particularly with respect to the claimed process, techniques and resultant device.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

Art Unit: 1762

owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 19-22, 134-135 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19-22 are dependent on claim 1 (not the claim that they directly follow, new claim 17), hence "said ion blocking layer" claimed therein has absolutely no antecedent basis, and no clear relationship to the claimed process.

Note that while not identically worded, claim 18 is effectively the same limitation as previously stated in claim 4. Not a formal problem, but a issue applicant might wish to consider.

In claims 134-135 "a plurality of times" mismatches a single article with a plural noun.

Claims 32-34 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s),

Art Unit: 1762

or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 32-34 are identical to claim 28-30, including dependence.

9. Claims 1-4, 6-9 18-22, 110-111 and 132-135 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mikio Honguo (or Hongo et al in translation) – JP 57-94482 as described in sections 9 and 10 of paper #51, mailed 8/10/01, alone or alternately in view of Nishimura et al (JP 60-147,111 A).

The amended claims required the additional limitation of scanning in a “direction orthogonal to the first direction, i.e. while Hongo et al teach scanning using an X-Y table (Fig. 6, translation p.4, bottom; p.8) or scanning via rotation (Fig. 7; p.3 or p.9) where the movement appears to be orthogonal to the tangential to the claimed first direction, which is not quit the same as the claimed limitation. Hongo et al’s direction of scanning for the X-Y table is more general than claimed, teaching “shifting direction of the processed object 6 via the X-Y table 9,...and the long-side direction of the variables rectangular slit ...”, hence there is no explicit teaching of scanning orthogonal to the first direction. However, the generic movements taught are inclusive of the claimed scanning orientation, as Fig. 6 shows the beam’s “long-side” orientation as parallel to one side of the X-Y table and orthogonal to the other, hence it would have been obvious to one of ordinary skill in the art that to shift the object via the X-Y table would effectively be performed by scanning either orthogonal or paralleled to the long-side (first direction) of the beam spot, where the orthogonal direction would have been expected to be preferred when even treatment is desired, as uniform irradiation would more easily be achieved at the start and stop of the scanning due to the narrow width. Also, this most closely corresponds to the scan direction of the rotational embodiment.

Alternatively, Nishimura teaches forming a beam spot larger than the width of a material to be irradiated, then scanning lengthwise over that surface, hence it would have been obvious to use the technique of Hongo et al to perform the scanning operations of Nishimura et al, as the beam spot created

Art Unit: 1762

fits the criteria of the secondary reference and provides advantages of optimized intensity for the spot coverage.

10. Claims 61-62, 66-67, 69, 71-72, 74, 76-77, 79, 81-82, 84, 86-87, 89, 91-96, 102-109 and 131 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongo et al, in view of Nishimura et al as applied to claims 1-4, 6-9, 18-22, 110-111 and 132-135 above, and further in view of Matsudarra et al (JP 60-226,042A) and Miller.

Hongo et al is a generic laser technique not directed to any particular end use, however the end use suggested by the secondary reference Nishimura et al is for recrystallizing semiconductor material, such as silicon, or a surface layer of Si nitride (see English abstract). While the abstract does not reveal what the substrate material is (translation has been ordered, but not yet received), glass substrates are typically used in processes such as Nishimura, hence would have been obvious for their standard purpose. The Si_3N_4 would inherently serve the function as a ion blocking layer, or alternately Miller (abstract; col. 1, line 30-41; Summary) shows that Si_3N_4 is old and well known as ion blocking layer, including when laser irradiation is to be employed, thus demonstrating its inherent ability as an ion blocking layer.

Use of soda-lime glass Si_3N_4 and laser irradiation, is seen to be known as an effective combination in Matsudarra et al, hence it would have been obvious to one of ordinary skill, to employ substrate material known to be compatible with taught processing techniques. Use of particular thicknesses of material will depend on the specification end use in which the semiconductor is to be employed, and would have been determined by routine experimentation.

11. Other art of interest includes Masuhara et al with further laser irradiation semiconductor process of interact.

12. Claims 1-4, 6-9, 18-22, 110-111, 132-135 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 & 5-15 of U.S. Patent

Art Unit: 1762

No. 4,786,358 in view of Hongo et al and Nishimura et al as discussed in section 11 of paper # 51 and above.

13. Claims 1-4, 6-9, 18-22, 110-111, 132-135 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-44 of U.S. Patent No. 6,149,988. Although the conflicting claims are not identical, they are not patentably distinct from each other because of reasons as discussed in section 12 of paper # 51, mailed 8/10/01.

14. Applicant's arguments filed 9/5/03, 6/13/02, 9/9/02 and 11/1/02 and discussed above have been fully considered but they are not persuasive.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

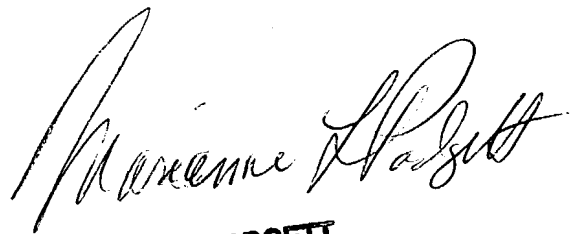
16. Any inquiry concerning this communication should be directed to M L. Padgett at telephone number (571) 272-1425. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 am to 4:30 pm.

Art Unit: 1762

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck, can be reached on (571) 272-1425. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. L. Padgett/af
April 22, 2003
May 9 & 10, 2004

A handwritten signature in black ink, appearing to read "Marianne Padgett". The signature is fluid and cursive, with a large initial "M" and "P".

MARIANNE PADGETT
PRIMARY EXAMINER